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MALLINCKRODT & MALLINCKRODT
10 EXCHANGE PLACE, SUITE 510
SALT LAKE CITY, UT 84111

EXAMINER

ZALUKAEVA, TATYANA

| ART UNIT | PAPER NUMBER |
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1713

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,557

Applicant(s)

STROMQUIST, DONALD M.

Examiner

Tatyana Zalukaeva

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 10-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-23 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9, drawn to a method of increasing ion exchange capacity, classified in class 502, subclass 25.
 - II. Claims 10-23, drawn to an apparatus for carrying out ion exchange process, classified in class 210, subclass 94.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used for a materially different process, such as, for instance, the attachment of ferrites to the surfaces of polymeric matrices.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Art Unit: 1713

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Mr. Mallinkrodt, esq., on August 26, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "a length of magnetic material" is indefinite, because the limits of such are not readily ascertainable.

The recited in claim 5 "series of pluses" is a non recognized term in the art.

Specification

8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

Art Unit: 1713

of the following is required: Claim 5 recites the "series of pluses", which is by itself indefinite as discussed before, and is not supported by the instant specification. .

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kochen et al (U.S. 5,652,190).

With regard to claim 1, Kochen discloses improved water decontamination process using ion exchange polymer resins in the presence of a magnetic field, as compared with water decontamination methods employing ordinary ion exchange resins or ferrites taken separately (increased capacity of the resin), see abstract. One of the object of Kochen's invention is to provide a method which exploits the apparent synergism between magnetic ferrites, anion exchange resins, and a magnetic field for purposes of contaminant removal from water. Another object of the invention is to enhance of the decontamination effect by carrying out the method in the presence of a magnetic field (col.3, lines 5-20). FIG. 2 Shows a schematic drawing of an apparatus preferred for the decontamination method of the invention, which clearly reads on the limitations of the instant claim 9.

11. Claims 1-3, 7, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by RU 2064693.

A mixture of an ion-exchange resin (5) with grains having ferromagnetic properties is placed in the internal space of a container (1) and a boiling layer is formed with a height equal to the height of a section of magnetic coils (2). The coils are moved upwards along the longitudinal axis of the container from its lower end at a speed depending on the volume capacity of the ion-exchange resin. During movement of the magnetic coils, the direct magnetic field acts on the grains of the resin with ferromagnetic properties, which acquire rotary and oscillating movements. A pseudo-liquefied layer is formed and moved upwards and slag corrosion products having magnetic properties are pulled to the ferromagnetic grains and are moved to the upper level of the water in the container. The ion-exchange resin with collected magnetic corrosion products is then separated from the water flow in a magnetic trap (see abstract).

12. Claims 1,2 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by SU 636254.

Ion exchange process is performed for water preparation for brewing by treating with an ion exchange resin in the presence of a uniform magnetic field of intensity 6.60-8., a/m., current strength 1.6-2.0 a. and voltage 18.0-24.0 V for H-cation form resins, and intensity 7.90-9.97 a/m current strength 1.6-2.0 a and voltage 24.0-30.0 V for Ca-cation form resins (abstract).

Art Unit: 1713

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochen. In view of RU'254 or RU'693, each one individually.

Kochen discloses the assembly according to the preferred embodiment, wherein a vertical glass column (1) is placed between the pole faces (2a) and (2b) of an electromagnet. A piece of stainless steel wool (3) is positioned inside the column, approximately equidistant from both ends (col.5, lines 1-8). Kochen does not specifically indicate that the magnetic field is produced by the coil or wire by applying a varying magnetic field. With regard to the use of coil or wire, it is note that the recited limitation is merely a device for performing otherwise known process, and therefore, those skilled in the art would have found obvious to utilize the coils of similar RU'254 (that provides

Art Unit: 1713

varying magnetic field) or RU'693 in the process of Kochen in order to achieve the required magnetic field with the reasonable expectation of success.

With specific regard to claim 4, it is known in the art that the most commonly and notoriously utilized form of DC and AC is a sinus wave , and therefore it is within the skill in the art to use such current in a process of Kochen to generate the magnetic field.

16. The prior art rejection has not been applied to claim 5, because the meaning of "series of pluses" is not comprehensible.

17. Other prior art cited in PTOL-892 shows the application of magnetic field in different processes and apparatuses involving ion exchange resins.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

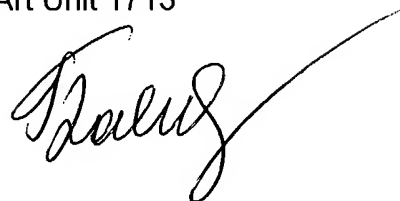
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/733,557
Art Unit: 1713

Page 8

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713

August 26, 2004

A handwritten signature in black ink, appearing to read 'Tatyana', with a long, sweeping horizontal stroke extending to the right.